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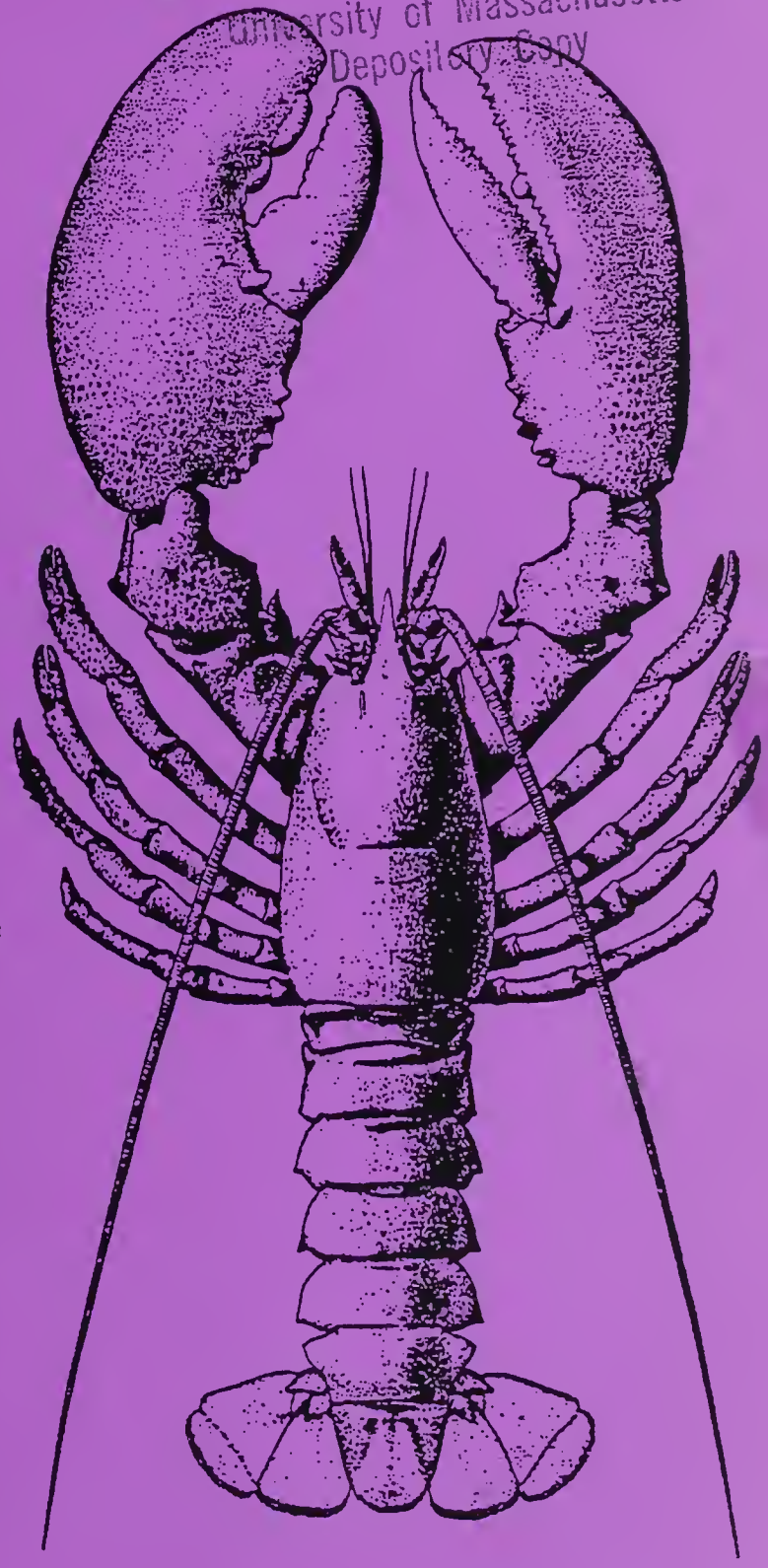
Massachusetts Lobster Fishery Statistics

Jonathan A. Pava
David C. McCarron
Thomas B. Hoopes



MASSACHUSETTS
DIVISION OF MARINE FISHERIES

1996
MASSACHUSETTS
LOBSTER FISHERY
STATISTICS

by
Jonathan A. Pava
Fisheries Statistician
and
David C. McCarron
Fisheries Economist
and
Thomas B. Hoopes
Systems Analyst

Information Systems and Fisheries Statistics Project
Massachusetts Division of Marine Fisheries
Annisquam River Marine Fisheries Station
30 Emerson Avenue
Gloucester, Massachusetts 01930
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The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Trudy Coxe, Secretary
Department of Fisheries, Wildlife and Environmental Law Enforcement
John C. Phillips, Commissioner
Division of Marine Fisheries
Philip G. Coates, Director

INTRODUCTION

The commercial lobster fishery of Massachusetts is the most economically important fishery conducted within the territorial waters of the Commonwealth. The overall importance of the fishery both in New England and, in recent years, the Mid-Atlantic states, has focused the attention of federal, regional and state fishery managers on this species. In the early 1970's, in an attempt to standardize management of the fishery, the federal and state governments developed an overall lobster fishery management plan under the auspices of the State-Federal Fisheries Management Program. However, with the passage of the Magnuson Fishery Conservation and Management Act in 1976, the New England Fisheries Management Council, in cooperation with the Mid-Atlantic Council, developed and implemented a management plan for the entire Atlantic Coast lobster fishery. The basis and success of any such plan is an accurate statistical database. The Commonwealth of Massachusetts, with funding from the National Marine Fisheries Service, has been collecting annual reports from licensed lobster fishermen since the early 1960's. In the past these data were used primarily for descriptive and informational purposes, and occasionally for management. With the more recent emphasis on Federal management, however, these data have provided the respective management agencies with the information they need to protect the interests of Massachusetts' lobstermen and ensure a productive fishery in the Commonwealth.

During the period 1975 - 1980, the number of coastal commercial lobster permits was limited by law to 1300, with an additional ten percent issued to proven hardship cases each year. In 1981, a statutory change mandated the establishment of a permanent waiting list from which 100 new permits were issued. Thirty special additional permits were also awarded to full-time commercial fishermen who met certain criteria. From 1982 to 1987, 80 list permits and 20 special additional permits were issued each year. In 1988, the issuance of new coastal permits was suspended. From 1988 to 1993, license transfers were allowed only within the immediate family, and if a license was allowed to expire, it was retired. In early 1993, a new regulation was promulgated by the DMF establishing broader eligibility criteria and new procedures for the transfer of Coastal Commercial Lobster Permits. As a result of these measures, the number of permits has declined from an all time high of 1,865 in 1988 to a more manageable 1,598 licenses today. The new system has also allowed for more orderly turnover in the industry. The new transfer procedures provide for transfer to employees (captains, deck hands, etc.) and persons on an established waiting list in addition to transfers within the immediate family. Only those licenses that have been actively fished for four out of the past five years according to catch reports filed with the Division may be transferred. The person to whom the permit is transferred must prove that he/she has at least one year of experience in the commercial lobster pot fishery or two years of experience in commercial fishing. All transferees must be owner/operators of the new business. Transfer activity for calendar year 1996 is described on Page 2.

This report is the thirtieth annual publication of data compiled from the catch reports of licensed lobster fishermen. Data were presented in a standardized format through 1979. In 1980, the presentation was enhanced as a result of improved collection and analysis methods. This publication represents the eleventh year in which the data processing and analysis have been completely automated. Areal data presented in this report conform to the National Marine Fisheries Service statistical reporting areas. This report does not, however, cover the scope of the Project's existing database and computational capability. Requests for expanded information, or questions concerning this publication, should be directed to the Division's Statistics Project in Gloucester, MA: (978) 282-0308.

This report has been prepared by personnel of the Division of Marine Fisheries Information Systems and Fisheries Statistics Project, funded jointly by the Commonwealth and the National Marine Fisheries Service under the Interjurisdictional Fisheries Act (Public Law 99-659). The preparation of this report would not have been possible without the cooperation of licensed lobstermen who provided the information on their annual reports. Special thanks go to Ann Spires who continues, year after year, to interpret and keypunch, with special care and accuracy, the type of reports that fishermen are likely to fill out. Thanks also go to Charlie Anderson, who heads up the project, for his help with system development and upgrades and for his suggestions concerning this publication. These two people are as important to this process as we are, and without them this publication would not be possible. The authors also wish to acknowledge the assistance of Bruce Estrella from our Lobster Biology Project and Eileen Feeney and Kevin Creighton from our permitting office.

SOURCE OF DATA

"*No person may fish for or take lobster in coastal waters or land lobster in the Commonwealth without a permit issued by the Director of the Division of Marine Fisheries.*" (Chapter 130, Mass. G.L., Section 38). Chapter 130, Mass. G.L., Section 33, requires any person so licensed to file an annual report of their catch by January 31 for the preceding calendar year. In 1980, a dual reporting system was established. Commercial lobstermen (coastal, offshore and seasonal(student)) received a detailed catch report form with their license renewal application. This report requests the following information: method of fishing; number and type of gear used; effort data (set-over days, number of trips per month, etc.); pounds of lobster caught; areas fished; principal ports of landing; and information relative to the vessels and traps used in the fishery. Recreational fishermen are asked to report on their license renewal application form the number of lobsters taken during the previous year and the maximum number of traps fished. Project personnel sort, edit, tabulate and interpret data from all reports received. Data presented in this publication are based on catch reports actually received as of September 2, 1997 and are not expanded to represent all of the permits issued in 1996.

COASTAL LOBSTER LICENSE TRANSFER

During 1993, the Division promulgated regulations to broaden the criteria for the transfer of a coastal lobster license from one individual to another. The intent of the new legislation was to create more options for lobstermen who wish to retire and leave this limited entry fishery. During calendar year 1996, the Division authorized the transfer of 66 coastal lobster licenses. Thirty one of the transfers went to 'captains' who were previously authorized to fish another holder's license and who had fished that holder's license for at least twelve months prior to transfer. Twelve transfers were allowed within the holder's immediate family (and would also have been allowed prior to the new regulation). Eleven transfers were made directly from the holder to a sternman with a documented fishing history. Twelve lobstermen advertised their coastal lobster businesses to persons on a waiting list maintained by the Division and subsequently transferred their permits. Seventeen licenses were forfeited to the Division in 1996; nine of these coastal lobster permits were issued directly to waiting list applicants, and the remaining eight licenses were permanently retired.

EXPLANATION OF TABLES

All data presented in this publication are broken down into two basic categories: the first is **"territorial"** which represents data pertaining to all lobstering activity taking place within the territorial waters (3 mile line) of the Commonwealth (Areas 1-14 on Figure 1A); the second is **"non-territorial"** which represents all data beyond those waters (Areas 15-25 on Figure 1B). In 1990, the statistical reporting map was revised to reflect the territorial / non-territorial breakdown and to conform to the National Marine Fisheries Service's statistical reporting areas. Figures 1A and 1B show the statistical reporting areas used by the Division to collect most commercial fisheries data in the Commonwealth.

Figure 1A. 1996 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Territorial Waters and Outlying Areas

Division of Marine Fisheries
DIRECTOR PHILIP COATES

MASS GIS — Massachusetts Geographic Information System
Massachusetts Executive Office of Environmental Affairs - 1997

Scale = 1:1,320,000

0 miles 10 20 30

Description of Boundaries for Territorial Areas

Between Areas	Boundaries
1 & 2	Castle Neck, Ipswich –Territorial Line
2 & 3	Gales Pt, Manchester –Territorial Line
3 & 4	Red Rock, Lynn –Territorial Line
4 & 5	Strawberry Pt, Cohasset –Territorial Line
5 & 6	High Pines Ledge, Plymouth –120 Foot Line
6 & 7	Scussett Beach, Sandwich –120 Foot Line
5, 6, 7 & 8	120 Foot Line
8 & 9	70 Degree Longitude Line
9 & 10	70 Degree Longitude Line
9 & 11	41 Degree 20 Minute Longitude Line
10 & 12	Wasque Pt, MV –Muskeget Island, Nantucket
10 & 13	Succonnesset Pt, Mashpee –Cape Pogue, MV

Between Areas	Boundaries
11 & 12	70 Degree Longitude Line
12 & 13	41 Degree 20 Minute Longitude Line
13 & 14	Elizabeth Islands and Sow & Pigs Reef to Territorial Line
14 & 15	70 Degree Longitude Line to Territorial Line

NOTE:
Parts of Area 10 (Nantucket Sound) are federal waters, but are managed by DMF.

= Territorial Waters

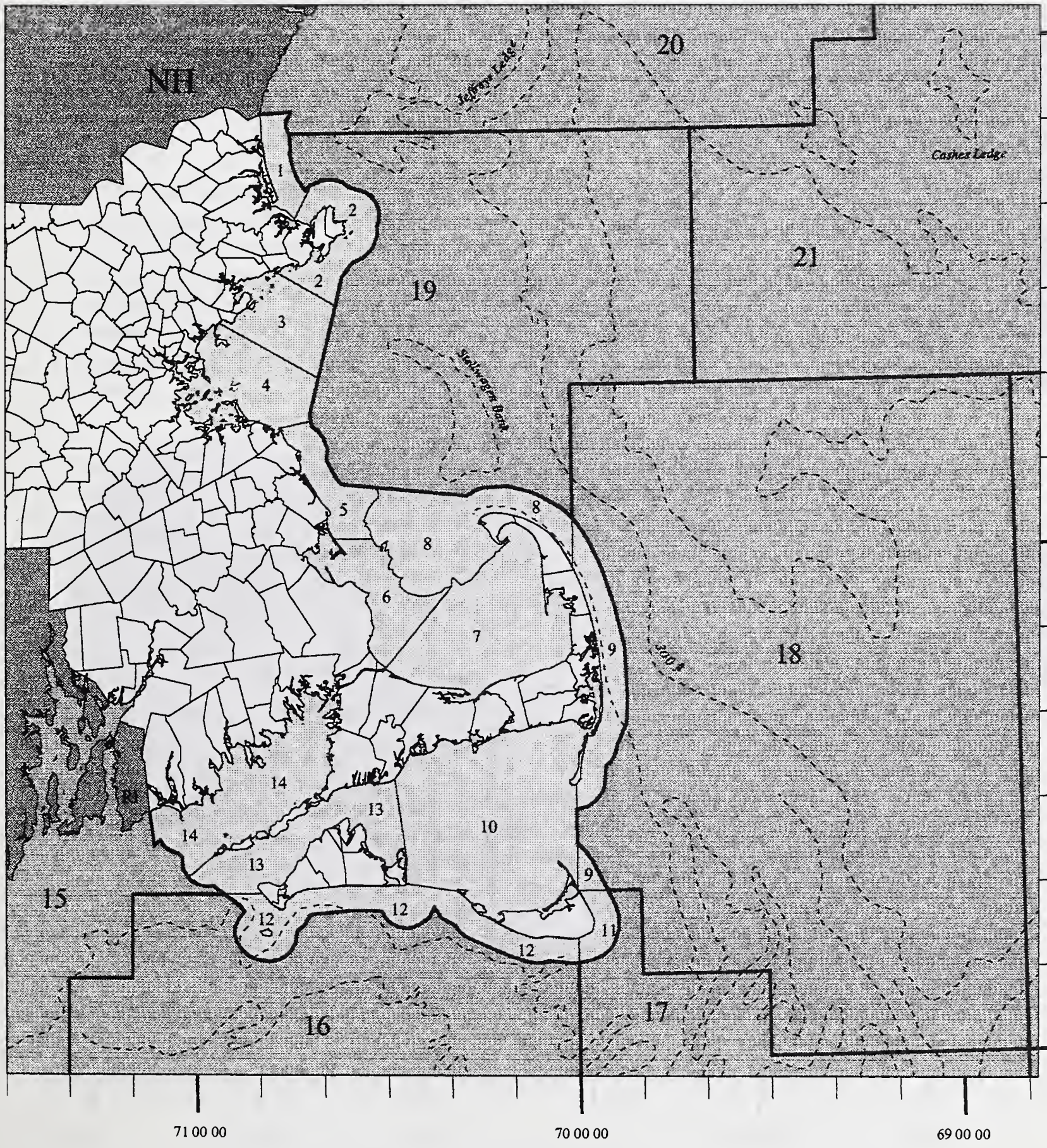
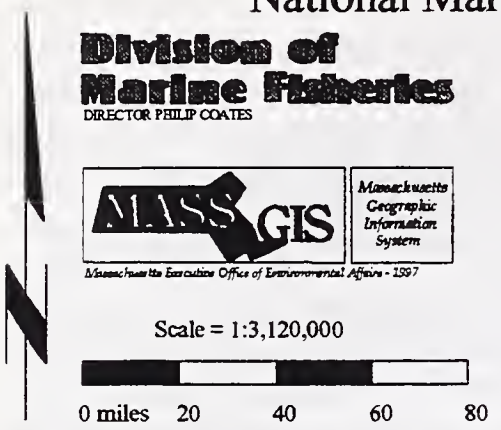


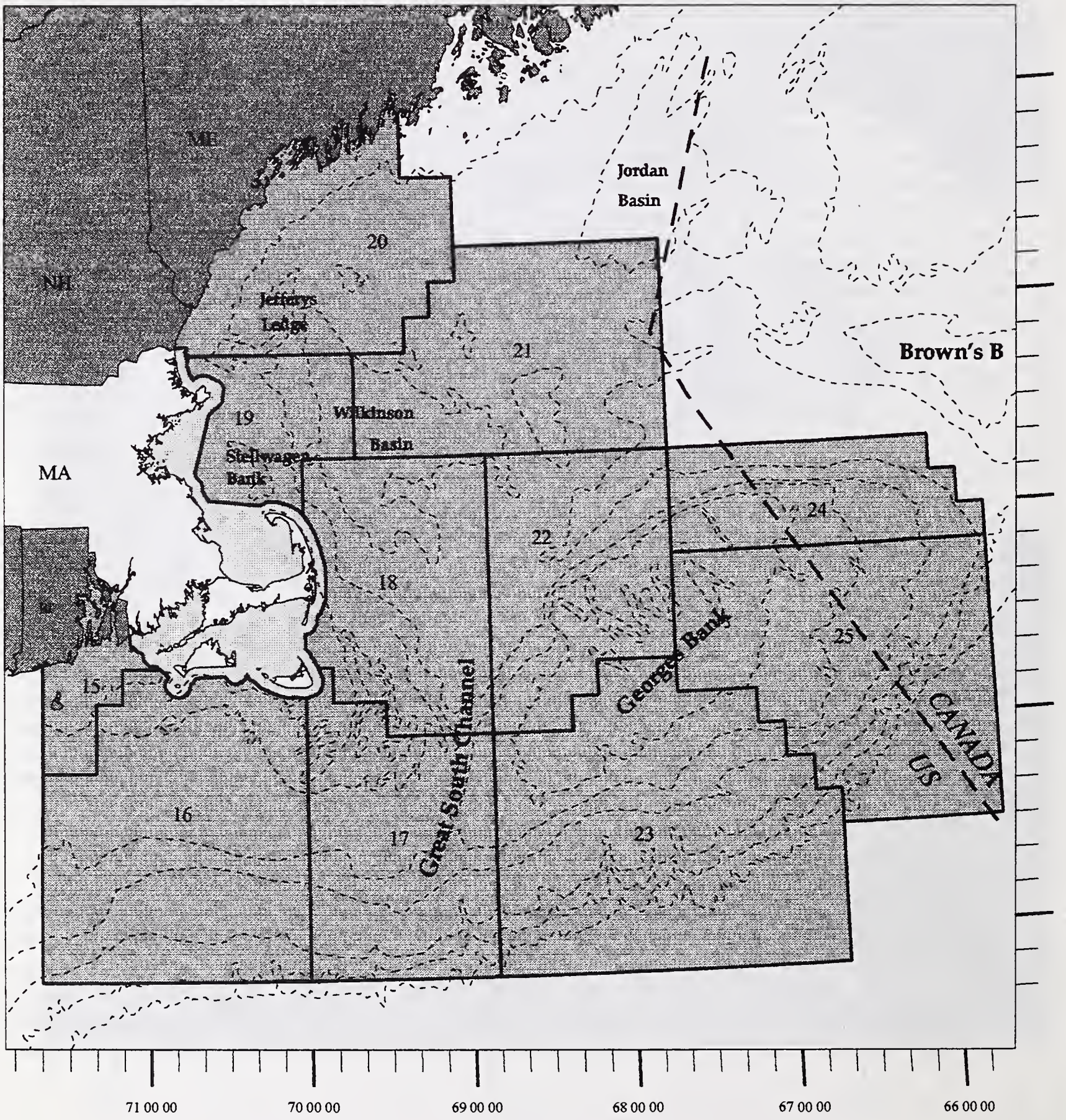
Figure 1B. 1996 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Offshore Areas (which correspond to the National Marine Fisheries Service Statistical Areas)



Areas 15 through 25 are the same geographic areas as the National Marine Fisheries Service statistical areas except where the Massachusetts territorial line runs through them.

— — = Hague Line

▭ = Territorial Waters



Here is a brief definition of each lobster license type:

Coastal Commercial: Allows the holder to harvest lobster anywhere, most importantly inside territorial waters.

Offshore Commercial: Allows the holder to harvest lobster outside territorial waters only.

Seasonal Commercial: Allows the holder, if he or she is a student, to harvest lobster anywhere, but with a maximum of 25 traps and only during the months of June - September.

Non-commercial: Allows the holder to harvest lobster anywhere using SCUBA gear, a maximum of 10 traps, or a combination of both. The catch may not be sold.

Regulations promulgated by the New England Fishery Management Council in cooperation with the major lobster harvesting states of the Atlantic Coast, declared 1990 the "off-year" of a 5-year program to increase the minimum legal size from 3 3/16 in 1987 to 3 5/16 inches by January of 1992 through four 1/32 inch increases. The program was suspended at the end of 1990 and the planned increases in 1991 and 1992 were delayed pending a study of the economic impact of the program. The gauge increase program has not resumed and has been superseded by a proposed amendment to the lobster Fishery Management Plan to control fishing effort without a gauge increase.

Tables presenting number of fishermen, number of pots fished, number and value of boats used in the fishery and total landings statewide, by county and license type, and for each city and town were prepared using the catch reports submitted by commercial fishermen. In keeping with Division policy, some of the data are masked or combined to protect the confidentiality of the individual submitting the report. Data referring to the number of fishermen, number and value of gear, and number and value of boats are presented by the home port of the licensee filing the report. Pounds of lobster harvested are presented by the port of landing reported by the fishermen.

Vessel and SCUBA gear values were calculated on the basis of the fishermen's estimate of its present value and the percentage of the time it is in use specifically for lobstering. Average values were used when the information was omitted from an individual report. When fishermen reported the number of lobsters taken, rather than poundage, a conversion factor of 1.28 pounds per lobster was used to calculate poundage figures. This figure is based on information collected by the Division's Coastal Lobster Investigations Project. For information on biological (average carapace length, sex ratios, percent of egg-bearing lobster in catch etc.) and other parameters (mortality, exploitation and catch per unit of effort rates) contact this Project in Pocasset, MA at (508) 563-1779.

Where tables refer to county, the reader is referred to Figure 10.

ISSUED LICENSES AND REPORTING STATUS

Table 1 lists the number of commercial and recreational licenses issued in 1996, the dollar value of fees collected and the number that reported catching lobster. There were 2,214 commercial lobster licenses issued during 1996: 1,598 coastal, 551 offshore and 65 seasonal. Non-commercial licenses issued totaled 11,083; a breakdown of their reporting status and landings can be found in Table 6.

As of September 2, 1997, a total of 70 licensed commercial lobstermen (3.2 percent) failed to file a catch report with the Division. Of the 2,144 commercial fishermen who reported, 525 or 24.5 percent claimed they did not catch any lobster during 1996. The number of coastal licenses issued continues to decline since a 1988 moratorium on the issuance of new licenses. An annual decrease of approximately three percent per year continued in 1996 driven by fishermen leaving the fishery and the Division's policy to retire half of these licenses through attrition.

The number of offshore licenses issued dropped approximately eight percent in 1996. Overall compliance with catch reporting by the offshore fleet appears to be improving. Student commercial licenses have increased in number by approximately 10 percent since 1992.

Table 1. 1996 Massachusetts Lobster Fishery; Reporting Status of Licenses Issued

License Type (Fee)	Licenses Issued	Licensing Revenue	Reported "Catching Lobster"		Reported "No Lobster Catch"		Not Reporting	
Coastal Commercial ($ 260)	1,598	$415,480	1,179	74%	404	25%	15	1%
Offshore Commercial ($ 260)	551	$143,260	400	73%	114	21%	37	7%
Seasonal (Student) Commercial ($ 65)	65	$4,225	40	62%	7	11%	18	28%
Non-Commercial ($ 40)	11,083	$443,320	6,871	62%	1,821	16%	2,391	22%
Total	13,297	$1,006,285	8,490	64%	2,346	18%	2,461	19%

Table 2. Massachusetts Commercial Lobster Fishery; Selected Licensing Information, 1992 - 1996

	1992	1993	1994	1995	**1996**	Percent Five Year Change
Coastal Licenses						
Issued	1,647	1,627	1,612	1,609	**1,598**	*-2.98%*
% Change		*-1.21*	*-0.92*	*-0.19*	***-0.68***	
"Caught Lobster"	1,185	1,195	1,194	1,190	**1,179**	
% Change		*2.08*	*0.85*	*-0.15*	***-0.24***	
"Did Not Catch Lobster"	445	412	401	403	**404**	
% Change		*-6.28*	*-1.76*	*0.69*	***0.94***	
Not Reporting	17	20	17	16	**15**	
% Change		*19.09*	*-14.21*	*-5.71*	***-5.60***	
Percent Not Reporting	1.0%	1.2%	1.1%	1.0%	**0.9%**	
Offshore Licenses						
Issued	710	711	648	596	**551**	*-22.39%*
% Change		*0.14*	*-8.86*	*-8.02*	***-7.55***	
"Caught Lobster"	439	479	480	439	**400**	
% Change		*8.96*	*9.95*	*-0.56*	***-1.44***	
"Did Not Catch Lobster"	196	148	119	117	**114**	
% Change		*-24.60*	*-11.78*	*6.90*	***5.39***	
Not Reporting	75	84	49	49	**37**	
% Change		*11.84*	*-36.00*	*8.72*	***-18.32***	
Percent Not Reporting	10.6%	11.8%	7.6%	8.2%	**6.7%**	
Seasonal (Student) Licenses						
Issued	59	74	89	82	**65**	*10.17%*
% Change		*25.42*	*20.27*	*-7.87*	***-20.73***	
"Caught Lobster"	29	44	49	42	**40**	
% Change		*20.97*	*11.36*	*-14.29*	***-4.76***	
"Did Not Catch Lobster"	9	8	15	12	**7**	
% Change		*-29.13*	*87.50*	*-20.00*	***-41.67***	
Not Reporting	19	22	25	28	**18**	
% Change		*-7.68*	*13.64*	*12.00*	***-35.71***	
Percent Not Reporting	32.2%	29.7%	28.1%	34.1%	**27.7%**	

Note: All annual percentage changes are normalized to the number of licenses issued for each license type in each year. Percent five year change is absolute.

LANDINGS AND VALUE

In 1996, 15,361,045 pounds of lobster were reported landed by commercial lobstermen in Massachusetts, a 3.69 percent decrease from 1995. Based on an average price of $3.26 per pound, the commercial catch was valued at $50,077,007, an 1.88 percent decrease from 1995. Figure 2 shows the weighted ex-vessel price for 1996 as derived from audits of lobstermen's records. The weighted average price of $3.26 reflects a 1.87 percent increase over the average ex-vessel price paid in 1995. (Weighted price means that each price is weighted by the number of pounds that were paid at that price instead of taking a flat average of all prices).

The coastal license holders reported landing 12,800,087 pounds, or 83.3 percent of the commercial catch, up 0.98 percent from 1995. Of the 15,361,045 pounds of lobster landed commercially, 9,109,902 were reported taken within the territorial waters of the Commonwealth. In total pounds of lobster landed, Essex County continues to be ranked first, Plymouth County second and Barnstable County third. See Table 3 for a breakdown of pounds landed and number of fishermen by license type and county and Table 4 for a five-year comparison of selected landings and effort statistics.

Gloucester was the number one port in total pounds landed followed by Marshfield, Plymouth and Sandwich in that order. In total numbers of active commercial fishermen, Essex County ranked first with 563, Plymouth County second with 332 and Bristol County third with 257. Among the cities and towns of the Commonwealth, Gloucester ranked first in active fishermen followed by New Bedford, Plymouth and Boston in that order. See Tables 3 and 5, (the shaded areas in Table 5 refer to the top 10 cities in at least one of the two categories: pounds landed and number of fishermen).

Figure 2. 1996 Massachusetts Commercial Lobster Fishery
Weighted Ex-Vessel Price Derived from Audited Lobstermen's Records

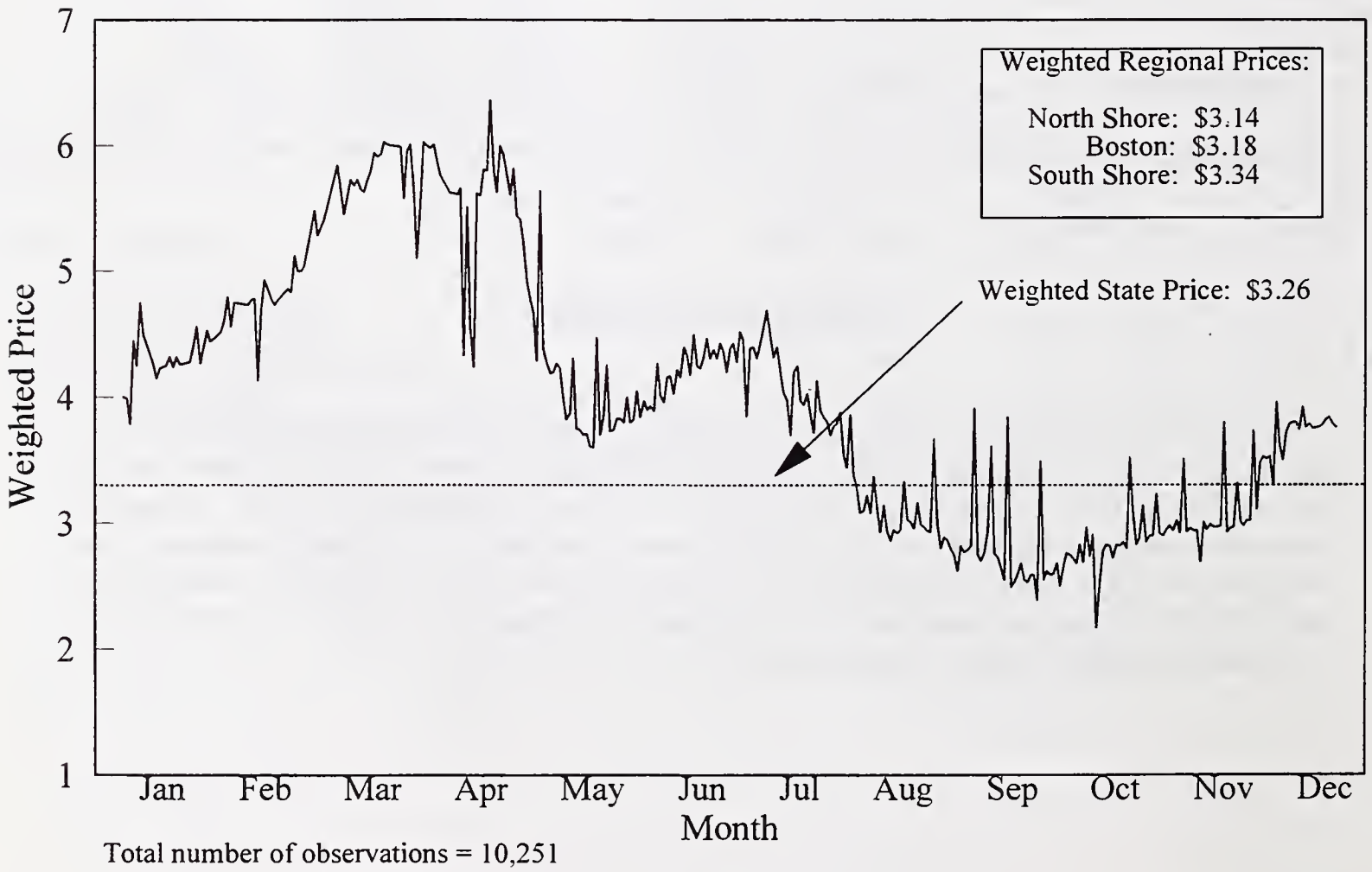


Table 3. 1996 Massachusetts Commercial Lobster Fishery; Number of Fishermen, Harvest (Lbs.) and Value of Harvest

AREA:	TERRITORIAL (Areas 1 - 14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		---- COASTAL -----		---- OFFSHORE ----			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	Potman	TOTAL * TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON- * TERRITORIAL	GRAND * TOTAL
-- COUNTY --												
BARNSTABLE												
Fishermen		139	11		11	164 +	12		10	34	56	220
Pounds		1,181,506	52,555		1,379	1,246,925	371,738		604,045	55,389	1,031,172	2,278,097
Value ($)		3,851,710	171,329		4,496	4,064,976	1,211,866		1,969,187	180,568	3,361,621	7,426,596
BRISTOL												
Fishermen		54			4	60 +	19		18	160	197	257
Pounds		486,244			750	490,330	443,140		646,922	345,053	1,435,124	1,925,454
Value ($)		1,585,155			2,445	1,598,476	1,444,636		2,108,966	1,124,873	4,678,504	6,276,980
DUKES												
Fishermen		26				28 +	6		5		12 +	40
Pounds		83,484				92,400	107,782		66,783		174,853	267,253
Value ($)		272,158				301,224	351,369		217,713		570,021	871,245
ESSEX												
Fishermen		391	6		13	414 +	56	6	9	78	149	563
Pounds		3,086,681	27,375		3,462	3,125,365	1,805,319	5,640	271,007	260,366	2,342,332	5,467,697
Value ($)		10,062,580	89,243		11,286	10,188,690	5,885,340	18,386	883,483	848,793	7,636,002	17,824,692
NANTUCKET												
Fishermen		6				9 +					2 +	11
Pounds		17,889				19,246					44,777	64,023
Value ($)		58,318				62,742					145,973	208,715
NORFOLK												
Fishermen		47				50 +					3 +	53
Pounds		411,511				412,822					80,371	493,193
Value ($)		1,341,526				1,345,800					262,009	1,607,809
PLYMOUTH												
Fishermen		265	6		7	284 +	23	6	4	15	48	332
Pounds		2,942,739	15,282		628	2,964,582	727,585	20,353	19945	79,369	847,252	3,811,834
Value ($)		9,593,329	49,819		2,047	9,664,537	2,371,927	66,351	65020.7	258,743	2,762,042	12,426,579
SUFFOLK												
Fishermen		71				74 +	5		5	29	39	113
Pounds		748,765				752,423	130,371		11,857	112,771	254,999	1,007,422
Value ($)		2,440,974				2,452,899	425,009		38,654	367,633	831,297	2,528,629
STATE TOTAL *												
Fishermen	7	999	26	12	39	1,083	124	12	51	319	506	1,589
Pounds	11,073	8,958,819	105,206	21,895	7,100	9,104,093	3,705,996	26,002	1,620,559	858,323	6,210,880	15,314,973
Value ($)	36,098	29,205,750	342,972	71,378	23,146	29,679,343	12,081,547	84,767	5,283,022	2,798,133	20,247,469	49,926,812
OUT OF STATE												
Fishermen						+					+	13
Pounds						5,809				34,898	40,263	46,072
Value ($)						18,937				113,767	131,257	150,195

* + Row and column totals may not equal the sum of the rows or columns due to masking of the data.

Value is based on an ex-vessel price of $3.26, see Figure 2.

Table 4. Massachusetts Commercial Lobster Fishery; Selected Landings (Lbs.) and Effort Statistics, 1992-96

	1992	1993	1994	1995	**1996**	Percent Five Year Change
Total Landings	14,967,260	14,425,864	16,174,818	15,949,362	**15,361,045**	2.63
Percent Change		-3.62	12.12	-1.39	**-3.69**	
Total Traps Fished	477,836	467,180	488,945	482,180	**495,651**	3.73
Percent Change		-2.23	4.66	-1.38	**2.79**	
Total Value	$44,602,435	$41,979,264	$47,068,720	$51,037,958	**$50,077,007**	12.27
Percent Change		-5.88	12.12	8.43	**-1.88**	
TERRITORIAL (Inside 3 Miles)						
Landings	9,658,545	9,124,412	10,498,316	10,040,721	**9,109,902**	-5.68
Percent Change		-5.53	15.06	-4.36	**-9.27**	
Value	$28,782,464	$26,552,039	$30,550,100	$32,130,307	**$29,698,281**	3.18
Percent Change		-7.75	15.06	5.17	**-7.57**	
Trap Landings	9,626,941	9,061,639	10,430,833	10,027,563	**9,076,886**	-5.71
		-5.87	15.11	-3.87	**-9.48**	
Traps Fished	376,901	361,213	365,821	358,075	**366,946**	-2.64
		-4.16	1.28	-2.12	**2.48**	
Non-Trap Landings	31,604	38,948	40,583	13,158	**33,016**	4.47
(Gillnet, Diver)		23.24	4.20	-67.58	**150.92**	
NON-TERRITORIAL (Outside 3 Miles)						
Landings	5,308,715	5,301,452	5,676,503	5,908,641	**6,251,143**	17.75
Percent Change		-0.14	7.07	4.09	**5.80**	
Value	$15,819,971	$15,427,225	$16,518,624	$18,907,651	**$20,378,726**	28.82
Percent Change		-2.48	7.07	14.46	**7.78**	
Trap Landings	4,296,329	4,315,675	4,634,960	4,994,645	**5,331,921**	24.10
		0.45	7.40	7.76	**6.75**	
Traps Fished	100,935	105,967	123,124	124,106	**128,704**	27.51
		4.99	16.19	0.80	**3.70**	
Non-Trap Landings	1,012,387	985,168	1,041,542	913,996	**919,222**	-9.20
(Gillnet, Trawler)		-2.69	5.72	-12.25	**0.57**	
Average Price ($) / Pound	2.98	2.91	2.91	3.20	**3.26**	
Percent Change		-2.35	0.00	9.97	**1.87**	
Ave. Lbs. / Trap-Haul	0.6309	0.6554	0.6976	0.7286	**0.7296**	
Percent Change		3.88	6.44	4.44	**0.14**	
Ave. Lbs. / Trap	29.14	28.63	30.81	31.15	**29.07**	
Percent Change		-1.73	7.61	1.09	**-6.68**	

Table 5. 1996 Massachusetts Commercial Lobster Fishery
Number of Active Commercial Fishermen and Landings by Homeport

Does Not Include Seasonal Licenses

TOWN	FISHERMEN NUMBER	FISHERMEN RANK	POUNDS TERRITORIAL	POUNDS NON-TERRITORIAL	TOTAL POUNDS	PERCENT	RANK
BARNSTABLE-YARMOUTH	10	29	48,628	357,334	405,962	2.65	14
BEVERLY	**44**	**10**	**383,136**	**213,663**	**596,799**	**3.90**	**9**
BOSTON	**93**	**4**	**494,259**	**236,082**	**730,341**	**4.77**	**5**
BOURNE	10	29	44,364	0	44,364	0.29	36
CHATHAM	**47**	**9**	**170,188**	**181,417**	**351,605**	**2.30**	**16**
CHILMARK	21	23	66,447	134,022	200,469	1.31	21
COHASSET	37	12	400,825	74,695	475,520	3.11	12
DANVERS	11	28	38,928	4,465	43,393	0.28	37
DARTMOUTH	9	30	11,795	160	11,955	0.08	44
DENNIS-BREWSTER	22	22	98,471	2,144	100,615	0.66	28
DUXBURY	8	31	75,929	0	75,929	0.50	31
ESSEX	4	35	6,520	0	6,520	0.04	46
FAIRHAVEN	**36**	**13**	**180,781**	**463,021**	**643,802**	**4.21**	**7**
FALMOUTH	12	27	55,089	28,594	83,683	0.55	29
GLOUCESTER	**215**	**1**	**966,806**	**1,797,523**	**2,764,329**	**18.06**	**1**
HARWICH	4	35	13,438	55,338	68,776	0.45	32
HINGHAM	25	19	300,363	63,942	364,305	2.38	15
HULL	30	15	223,937	112,812	336,749	2.20	17
IPSWICH-ROWLEY	23	21	35,981	0	35,981	0.24	39
KINGSTON	5	34	39,826	0	39,826	0.26	38
LYNN	8	31	90,337	33,065	123,402	0.81	26
MANCHESTER	27	17	168,674	61,509	230,183	1.50	19
MARBLEHEAD	**49**	**8**	**335,819**	**76,411**	**412,230**	**2.69**	**13**
MARSHFIELD	**77**	**5**	**851,550**	**286,197**	**1,137,747**	**7.43**	**2**
MATTAPOISETT	11	28	43,184	33,719	76,903	0.50	30
NAHANT	25	19	196,101	48,569	244,670	1.60	18
NANTUCKET	9	30	18,598	44,777	63,375	0.41	34
NEW BEDFORD	**171**	**2**	**195,861**	**526,387**	**722,248**	**4.72**	**6**
NEWBURYPORT-NEWBURY	26	18	50,072	15,602	65,674	0.43	33
ORLEANS-EASTHAM	24	20	133,883	12,440	146,323	0.96	25
PLYMOUTH	**101**	**3**	**1,074,643**	**41,909**	**1,116,552**	**7.29**	**3**
PROVINCETOWN	34	14	172,205	22,676	194,881	1.27	22
QUINCY	7	32	5,317	816	6,133	0.04	47
REVERE	8	31	154,879	20,764	175,643	1.15	24
ROCKPORT	**59**	**6**	**423,668**	**80,219**	**503,887**	**3.29**	**11**
SALEM	7	32	5,460	157	5,617	0.04	48
SALISBURY	9	30	14,949	96	15,045	0.10	42
SANDWICH	**41**	**10**	**473,670**	**367,723**	**841,393**	**5.50**	**4**
SAUGUS	28	16	218,720	5,045	223,765	1.46	20
SCITUATE-NORWELL	**57**	**7**	**319,028**	**308,592**	**627,620**	**4.10**	**8**
SWAMPSCOTT	19	24	186,731	5,994	192,725	1.26	23
TISBURY-EDGARTOWN-OAK BLUFFS	16	26	19,562	40,830	60,392	0.39	35
TRURO	7	32	14,292	0	14,292	0.09	43
WAREHAM-MARION	11	28	35,492	82	35,574	0.23	40
WELLFLEET	6	33	27,710	3,506	31,216	0.20	41
WESTPORT-SWANSEA-FALL RIVER	**39**	**11**	**101,143**	**445,572**	**546,715**	**3.57**	**10**
WEYMOUTH	4	35	6,447	3,011	9,458	0.06	45
WINTHROP	17	25	103,285	0	103,285	0.67	27
STATEWIDE TOTAL	**1,563**		**9,096,991**	**6,210,880**	**15,307,871**	**100.00**	
OUTOFSTATE	13		5,812	40,262	46,074		

Shaded areas denote towns which rank in the top 10 for number of fishermen or total landings or both.

RECREATIONAL LOBSTER FISHERY

Recreational statistics are shown in Table 6. Licenses issued in 1996 totaled 11,083, down slightly from 1995, with 8,629 or 78 percent, reporting that they fished for lobster. In general, reporting rates dropped slightly and the percentage of license holders fishing decreased. Landings fell by about eight percent from 1995. The number of traps fished in the recreational fishery has risen steadily for the past few years. The number of hours dived has continued to decline from 1992 levels. Landings amounted to 335,776 pounds or only 2.2 percent of the commercial landings. It should be noted that those individuals who did not report, were not able to renew their recreational license for 1996. Twenty-one percent of the licenses in the recreational fishery have turned over in the past year; historically, this turn-over rate is not unusual.

Table 6. 1996 Massachusetts Recreational Lobster Fishery; License Status and Harvest Information

License Type:	Diver	Diver/Pot	Potman	Total	Percent
1) Number of Licenses Issued in 1996	3,683	3,169	4,231	**11,083**	
2) Number That Reported	2,714	2,667	3,311	**8,692**	***78.43%***
a) Total Number That Fished	2,074	2,075	2,722	**6,871**	***62.00%***
b) Total Number That Did Not Fish	640	592	589	**1,821**	***16.43%***
3) Number That Did Not Report	1,087	668	929	**2,391**	***21.57%***
4) Number of Lobsters Reported Landed	33,672	69,475	159,178	**262,325**	Percent Change from 1995
Pounds of Lobsters (Calculated)*	43,100	88,928	203,748	**335,776**	*-7.94%*
5) Number Pots Fished		7,111	20,907	**28,018**	*1.92%*
6) Number of Hours Diving	28,411	27,027		**55,438**	*-0.14%*

* Based on 1.28 Pounds per Lobster.

TERRITORIAL FISHERY

Territorial landings by commercial fishermen were concentrated in the months of July through November when 82 percent of the yearly harvest was landed. A typical yearly scenario is for catches to increase sometime in mid to late July and peak in August and September. Water temperatures rise during this time inducing growth and subsequent recruitmentof previously sub-legal lobsters into the legal size category. The 1996 landings were primarily distributed July thru November with concentrated landings in September and October. Landings in 1995 reflected a more uniform distribution with concentrations August thru October. See Table 7 and Figure 3.

The greatest harvest of lobster from territorial waters was from the Boston Harbor vicinity (including the outlying areas which comprise Area 4 on Figure 1A), where approximately 22% of the state's territorial harvest was caught. This far outweighs any of the other designated areas in terms of landings

Table 7. 1996 Massachusetts Commercial Lobster Fishery
Percent Monthly Territorial Harvest by License Type

Month	Coastal	Seasonal
January	0.83	0.00
February	0.39	0.00
March	0.62	0.00
April	1.98	0.00
May	4.42	0.00
June	5.59	16.83
July	10.25	35.01
August	14.35	35.98
September	21.68	12.17
October	22.05	0.00
November	13.45	0.00
December	4.39	0.00
Total	100.00	100.00

Figure 3. 1996 Massachusetts Commercial Lobster Fishery
Total Monthly Territorial Harvest for Coastal and Seasonal License Types

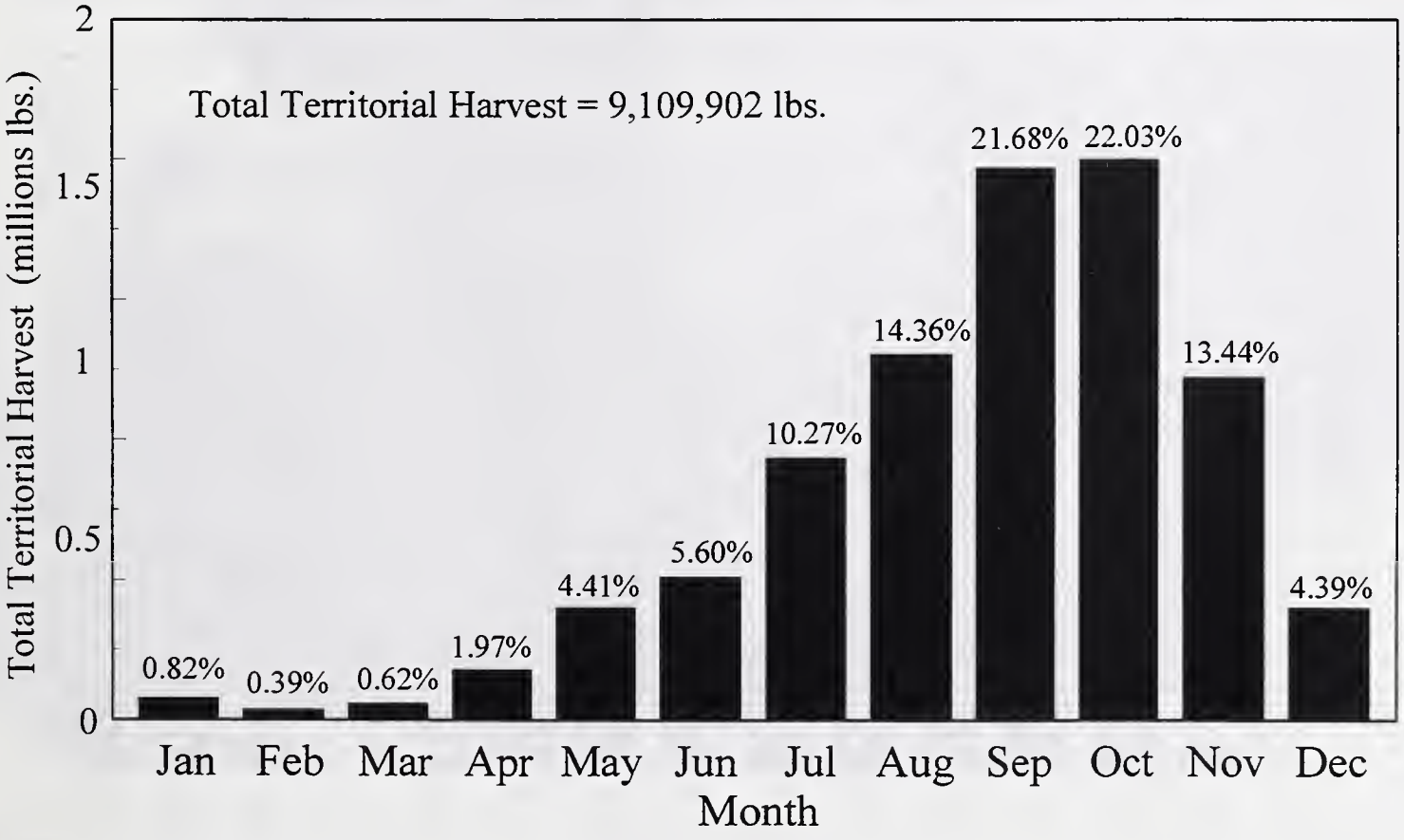


Table 8. 1996 Massachusetts Commercial Lobster Fishery
Percent Territorial Harvest by Area Fished by License Type

Area Fished	Coastal	Seasonal
1	1.51	1.31
2	15.30	35.38
3	11.61	9.68
4	21.65	5.31
5	10.77	3.94
6	7.92	9.23
7	6.88	10.20
8	12.30	0.00
9	3.31	2.22
10	0.48	12.05
11	0.01	0.00
12	1.84	0.00
13	2.05	0.00
14	4.38	10.68
Total Pounds	9,063,247	7,023

Territorial landings were down 9.2 percent in 1996. Although many areas including Boston Harbor saw notable decreases in their percentage share of territorial landings, a few areas, including Cape Ann and Cape Cod Bay did show increases for the year. See Figure 1A for the map of fishing areas and Figure 4 and Table 8 for a complete breakdown by area for each license type and month.

Offshore license landings are not shown in Figures 3 and 4 because license holders of this type cannot harvest lobsters within territorial waters. Offshore landings are more evenly distributed during the year with offshore potmen landings peaking in autumn and mobile gear landings peaking in the winter months. Figure 5 shows the distribution of all lobster landings by statistical reporting area.

Figure 4. 1996 Massachusetts Commercial Lobster Fishery
Total Territorial Harvest for Coastal and Seasonal License Types by Area Fished

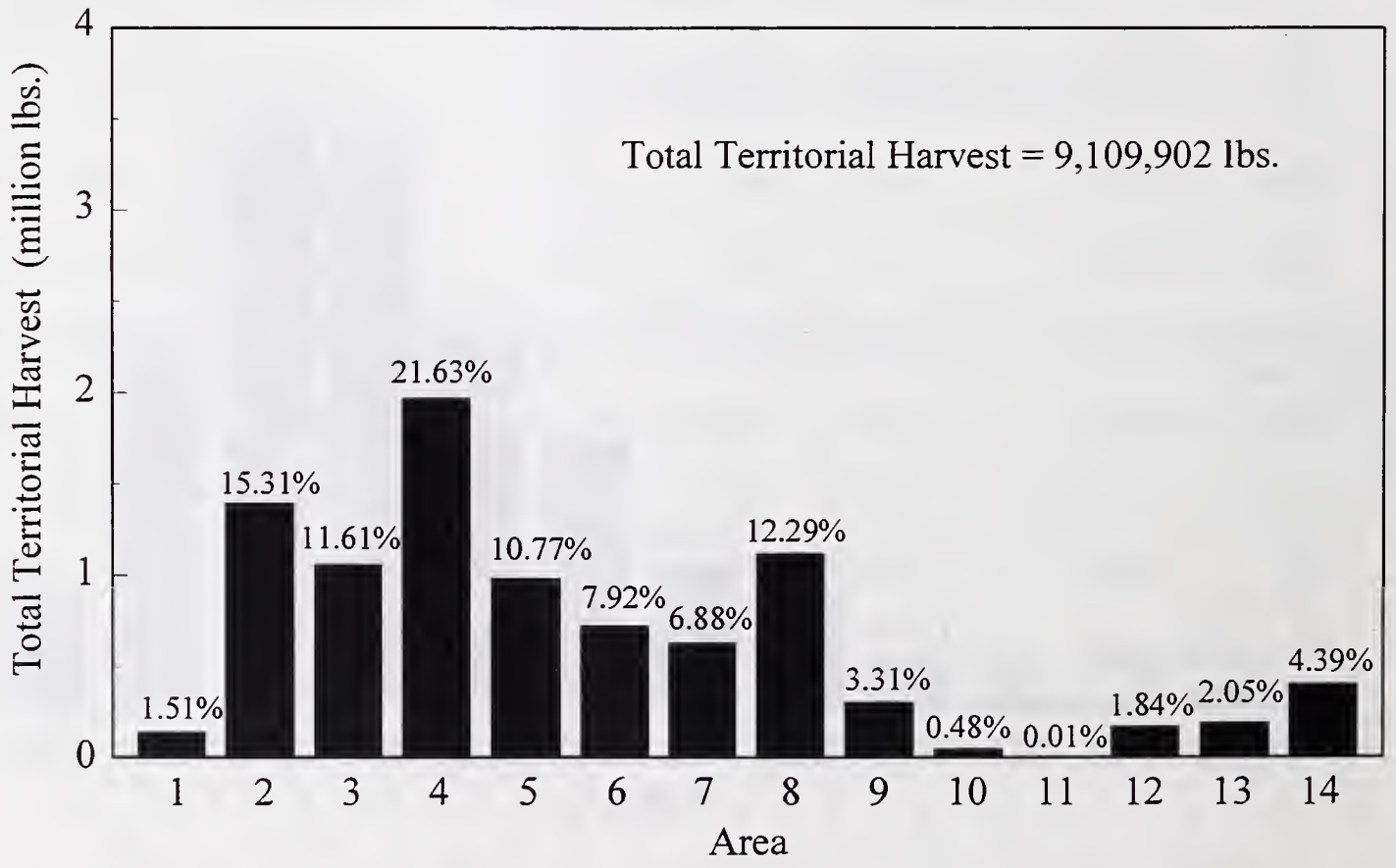
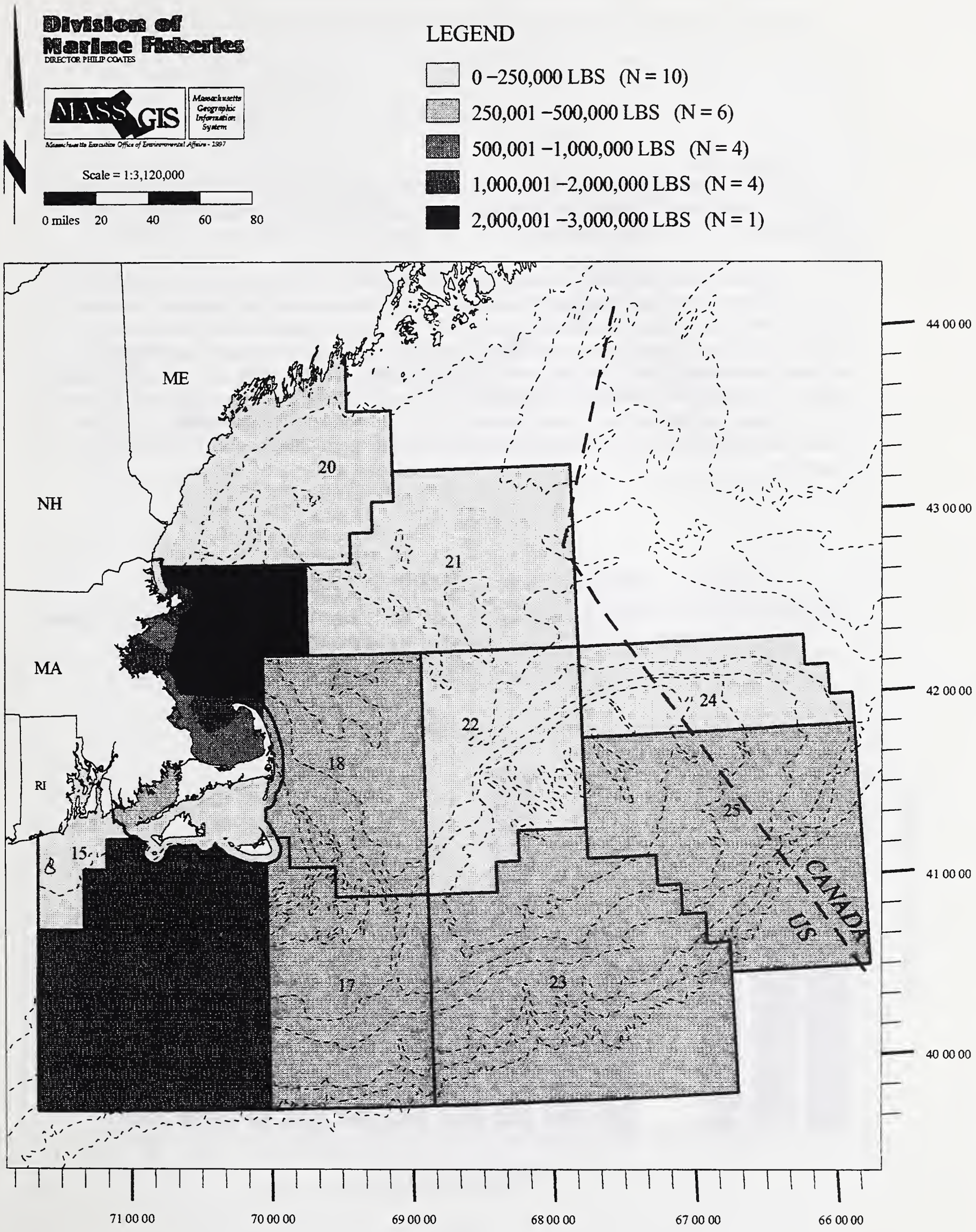


Figure 5. 1996 Massachusetts Lobster Fishery; Landings by Statistical Reporting Area –(See Figures 1A & 1B for References to Reporting Areas



CATCH RATES

The average catch per trap haul for coastal lobstermen was .6782 pounds, a decrease from 1995. For traps fished one set-over day the average was, .3181; for those fished two days, .6613; for three days, .6701; and for four days, .6774. See Figure 6 for catch effort by set-over day.

Figures 7 and 8 show the average catch per trap-haul - set-over day for area fished and month, where set-over day is factored into the effort. The average catch per trap haul - set-over day for 1996 was .2044, a six percent increase from 1995 and a nine percent decrease from 1991. Overall these figures should be categorized as "estimates" since, in many cases, fishermen will estimate the number of traps hauled per trip for each month. If a fisherman leaves this information blank, the catch report is returned for corrections. If the combination of maximum traps, set-over days, average traps hauled per trip and number of trips per month is out of range for a particular month, the information is interpolated by Division statistics personnel and then factored into the analysis.

Figure 6. 1996 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort by Set-Over Day for Coastal Potmen and All Potmen

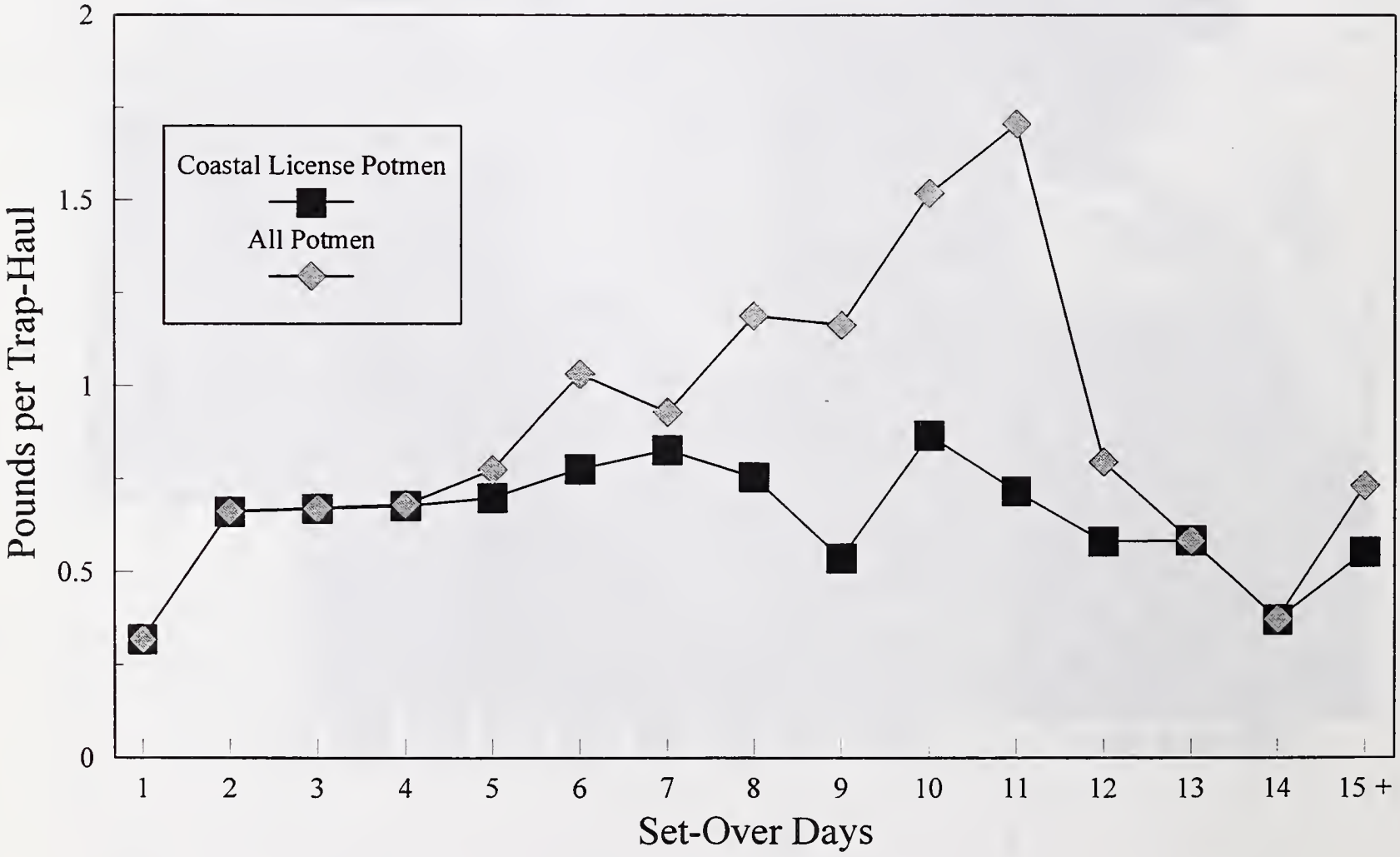


Figure 7. 1996 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort for Coastal and All Potmen by Month

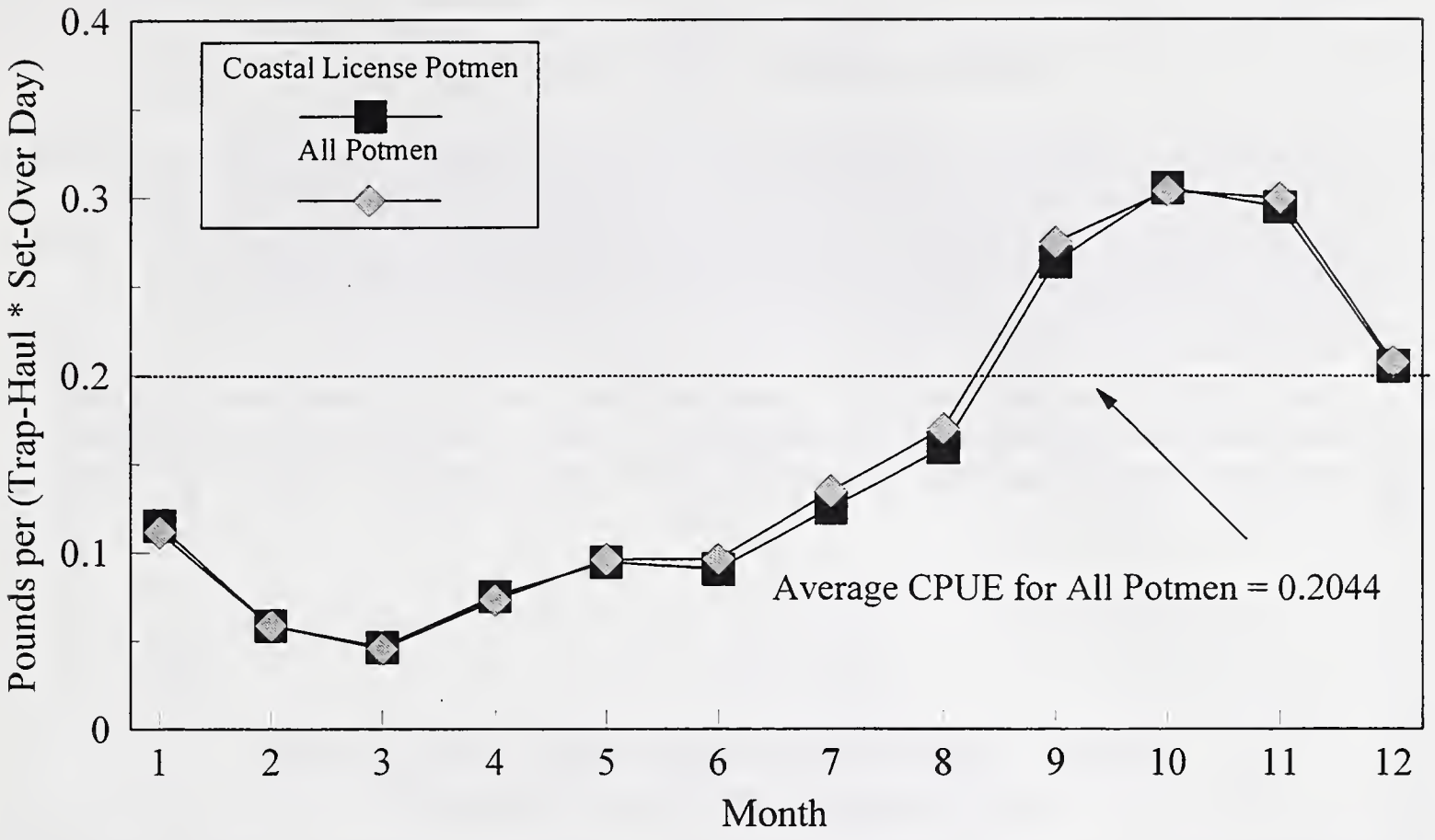
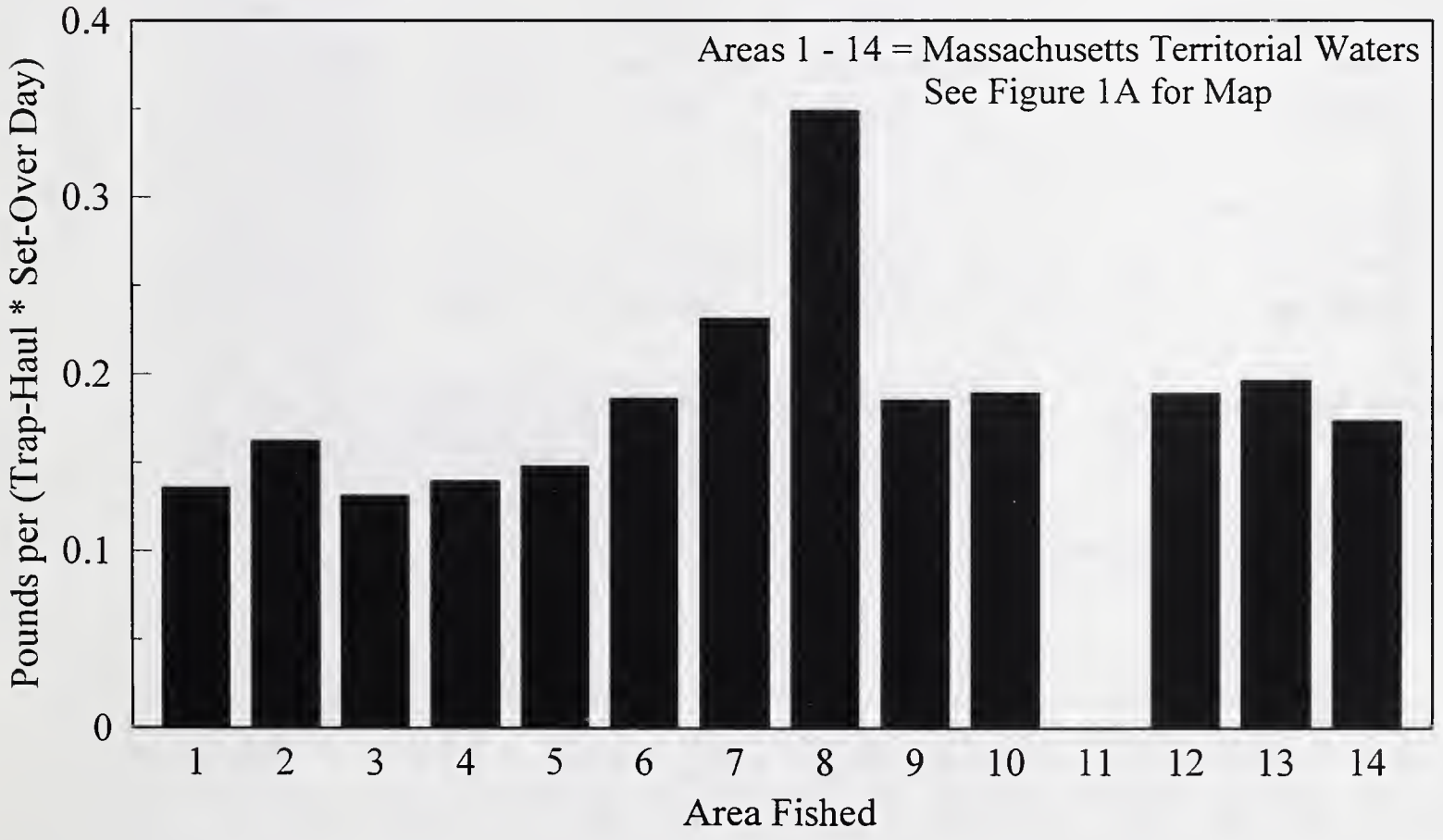


Figure 8. 1996 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort for All License Types by Area Fished



FISHING GEAR, VESSELS AND VALUE

In the commercial fishery, traps were valued at $26,840,264, diving gear at $39,418, and power and non-power boats at $50,182,751 yielding a total gear value of $77,062,433. Combined with the ex-vessel value of lobster sold, $50,077,007, this gives a total fishery value of $127,139,440. See Tables 9, 10 and 11.

Overall, 82% of the traps fished in the commercial fishery were wire framed, with 17% being wooden framed and approximately 0.4% categorized as "other". Average value (including warp and buoy) ranged anywhere from $35.34 to $106.82 with an average value of $54.49. See Table 9.

Table 9. 1996 Massachusetts Commercial Lobster Fishery
Trap Types Fished and Value by License Type

	Coastal	Offshore	Seasonal	Total Trap Type	Percent of Total
Wooden Framed Traps	76,873	8,301	119	**85,293**	17.32%
Value	$3,996,030	$715,241	$5,141	**$4,716,412**	
Value/Trap	$51.98	$86.17	$43.23	**$55.30**	
Wire Framed Traps	375,847	28,896	678	**405,422**	82.31%
Value	$19,610,000	$2,338,534	$23,974	**$21,972,508**	
Value/Trap	$52.18	$80.93	$35.34	**$54.20**	
Other Trap Types	792	1,055	4	**1,850**	0.38%
Value	$38,568	$112,700	$76	**$151,344**	
Value/Trap	$48.73	$106.82	$0.00	**$81.79**	
Total for License Type	**453,512**	**38,252**	**801**	**492,565**	
Value	**$23,644,598**	**$3,166,475**	**$29,190**	**$26,840,263**	
Value/Trap	**$52.14**	**$82.78**	**$36.44**	**$54.49**	

Value of trap includes warp and buoy. These figures include out-of-state fishermen.

Table 10. 1996 Massachusetts Commercial Lobster Fishery; Number of Fishing Vessels and Pots Fished

AREA:	TERRITORIAL (Areas 1-14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		--- COASTAL ---		--- OFFSHORE ---			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	(Student) Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON-TERRITORIAL	GRAND TOTAL
-- COUNTY --												
BARNSTABLE												
Pots Fished	0	48,374	2,464	0	204	51,042	10,323	0	7,490	0	17,813	68,855
Power Boat	1	160	14	0	11	186	14	0	9	32	55	241
Non Power Boat	0	35	3	0	0	38	5	0	0	0	5	43
BRISTOL												
Pots Fished	0	16,497	0	0	58	16,555	11,513	0	13,186	0	24,699	41,254
Power Boat	0	56	0	2	3	61	19	0	18	126	163	224
Non Power Boat	0	2	0	0	0	2	0	0	0	0	0	2
DUKES												
Pots Fished	0	3,959	469	0	0	4,460	2,166	0	1,895	0	4,061	8,521
Power Boat	0	29	3	0	0	32	8	0	4	1	13	45
Non Power Boat	0	4	1	0	0	5	0	0	0	0	0	5
ESSEX												
Pots Fished	0	129,661	1,462	0	280	131,403	36,992	0	8,785	0	45,777	177,180
Power Boat	1	411	8	2	12	434	60	6	10	62	138	572
Non Power Boat	0	105	2	0	0	107	3	1	0	0	4	111
NANTUCKET												
Pots Fished	0	912	0	0	45	957	999	0	0	0	999	1,956
Power Boat	0	7	0	0	1	8	1	0	0	1	2	10
Non Power Boat	0	1	0	0	0	1	0	0	0	0	0	1
NORFOLK												
Pots Fished	0	17,221	60	0	50	17,331	2,725	0	0	0	2,725	20,056
Power Boat	0	49	1	0	2	52	2	0	0	0	2	54
Non Power Boat	0	25	1	0	0	26	1	0	0	0	1	27
PLYMOUTH												
Pots Fished	0	107,983	1,205	0	143	109,331	21,010	0	1,900	0	22,910	132,241
Power Boat	2	302	8	4	8	324	26	4	4	13	47	371
Non Power Boat	0	61	1	0	1	63	5	0	1	0	6	69
SUFFOLK												
Pots Fished	0	34,523	0	0	0	34,523	5,601	0	3,906	0	9,507	44,030
Power Boat	1	76	0	0	0	77	5	0	6	27	38	115
Non Power Boat	0	4	0	0	0	4	0	0	0	0	0	4
STATE TOTAL												
Pots Fished	0	359,130	5,660	0	783	365,602	91,329	0	37,162	0	128,491	494,093
Power Boat	5	1,090	31	8	37	1,174	135	10	51	262	458	1,632
Non Power Boat	0	237	8	0	1	246	14	1	1	0	16	262
OUT OF STATE												
Pots Fished	0	250	0	0	0	250	0	0	1,340	0	1,340	1,590
Power Boat	0	2	0	0	0	2	0	0	2	8	10	12
Non Power Boat	0	0	0	0	0	0	0	0	0	0	0	0

Table 11. 1996 Massachusetts Commercial Lobster Fishery; Value of Fishing Vessels and Diving Gear

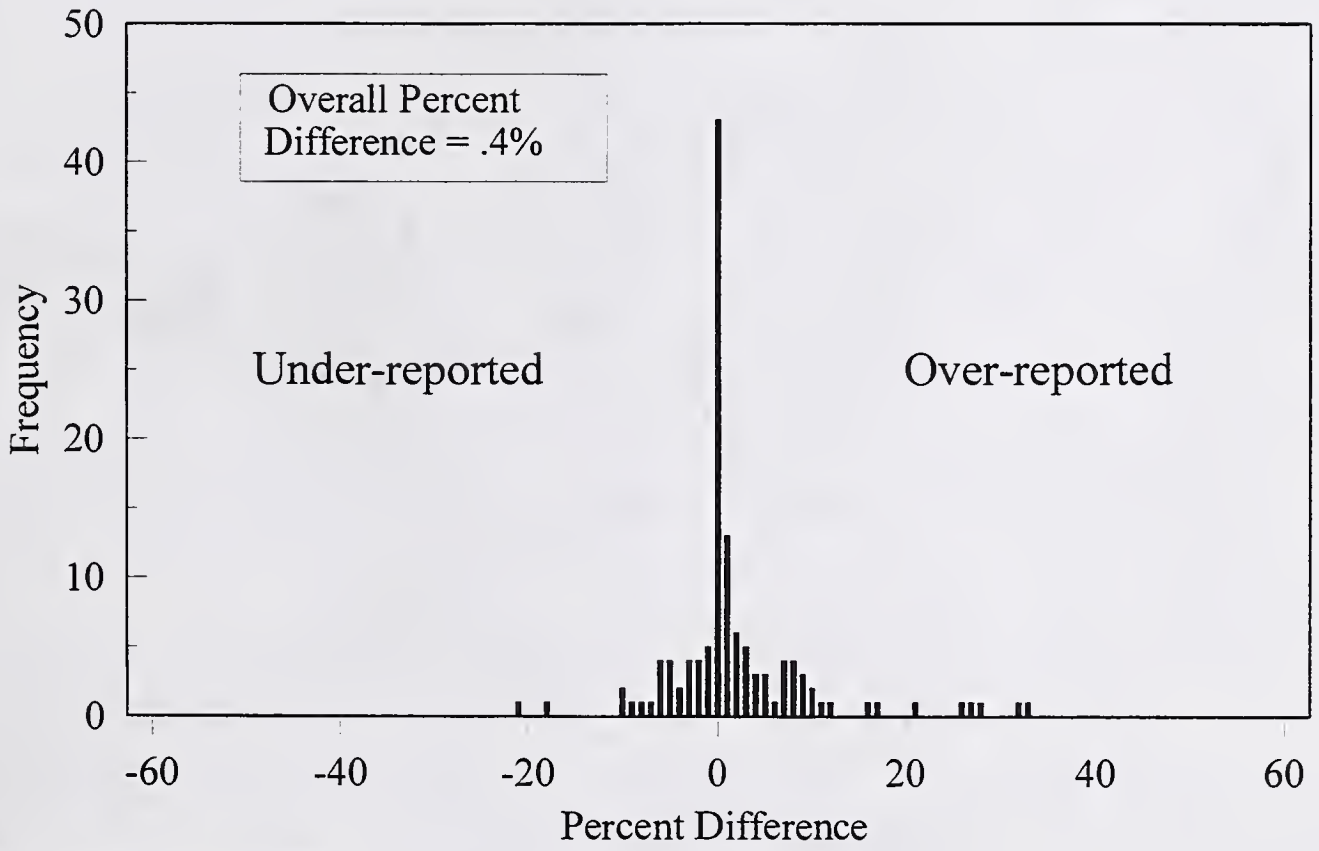
AREA:	TERRITORIAL (Areas 1-14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		--- COASTAL ---		--- OFFSHORE ---			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	(Student) Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON-TERRIRTORIAL	GRAND TOTAL
-- COUNTY --												
BARNSTABLE												
Diving Gear	2,950	0	18,150	0	0	21,100	0	0	0	0	0	21,100
Power Boat	26,400	4,115,002	540,400	0	73,797	4,755,599	1,096,300	0	1,616,500	196,039	2,908,839	7,664,438
Non Power Boat	0	11,666	437	0	0	12,103	2,657	0	0	0	2,657	14,760
BRISTOL												
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	1,314,250	0	6,000	5,900	1,326,150	1,387,500	0	1,860,450	436,300	3,684,250	5,010,400
Non Power Boat	0	550	0	0	0	550	0	0	0	0	0	550
DUKES												
Diving Gear	0	0	605	0	0	605	0	0	0	0	0	605
Power Boat	0	447,700	67,125	0	0	514,825	225,650	0	123,950	2,000	351,600	866,425
Non Power Boat	0	675	800	0	0	1,475	0	0	0	0	0	1,475
ESSEX												
Diving Gear	3,000	0	3,515	0	0	6,515	0	0	0	0	0	6,515
Power Boat	62,500	10,220,000	85,250	10,500	52,385	10,430,635	3,799,300	75,400	1,309,000	836,170	6,019,870	16,450,505
Non Power Boat	0	48,459	1,500	0	0	49,959	4,265	160	0	0	4,425	54,384
NANTUCKET												
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	163,250	0	0	3,000	166,250	78,000	0	0	15,000	93,000	259,250
Non Power Boat	0	0	0	0	0	0	0	0	0	0	0	0
NORFOLK												
Diving Gear	0	0	125	0	0	125	0	0	0	0	0	125
Power Boat	0	1,626,470	3,000	0	2,750	1,632,220	240,000	0	0	0	240,000	1,872,220
Non Power Boat	0	9,764	50	0	0	9,814	100	0	0	0	100	9,914
PLYMOUTH												
Diving Gear	7,950	0	1,133	0	0	9,083	0	0	0	0	0	9,083
Power Boat	29,950	8,084,509	127,750	9,500	13,420	8,265,129	1,207,450	30,600	295,000	364,125	1,897,175	10,162,304
Non Power Boat	0	30,537	200	0	50	30,787	1,420	0	450	0	1,870	32,657
SUFFOLK												
Diving Gear	1,990	0	0	0	0	1,990	0	0	0	0	0	1,990
Power Boat	10,000	3,275,150	0	0	0	3,285,150	390,000	0	806,650	2,753,155	3,949,805	7,234,955
Non Power Boat	0	750	0	0	0	750	0	0	0	0	0	750
STATE TOTAL												
Diving Gear	15,890	0	23,528	0	0	39,418	0	0	0	0	0	39,418
Power Boat	128,850	29,246,331	823,525	26,000	151,252	30,375,958	8,424,200	106,000	6,011,550	4,602,789	19,144,539	49,520,497
Non Power Boat	0	102,401	2,987	0	50	105,438	8,442	160	450	0	9,052	114,490
OUT OF STATE												
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	40,500	0	0	0	40,500	0	0	450,850	56,414	507,264	547,764
Non Power Boat	0	0	0	0	0	0	0	0	0	0	0	0

VALIDITY OF DATA

Each year 150 coastal license holders are selected for audit and asked to submit the records they used to complete the harvest portion of their catch report. The Division does this to help estimate the amount of error involved in the reporting process. Selection is done randomly except when fishermen fail an audit. In these cases, they are audited again the following year. The audit was first instituted in 1977 for the 1976 catch reports. Over the last five years the lobstermen selected for audit reported landing 7,082,511 pounds. The audit of their records revealed a harvest of 7,110,835 pounds or a difference of -0.39 percent.

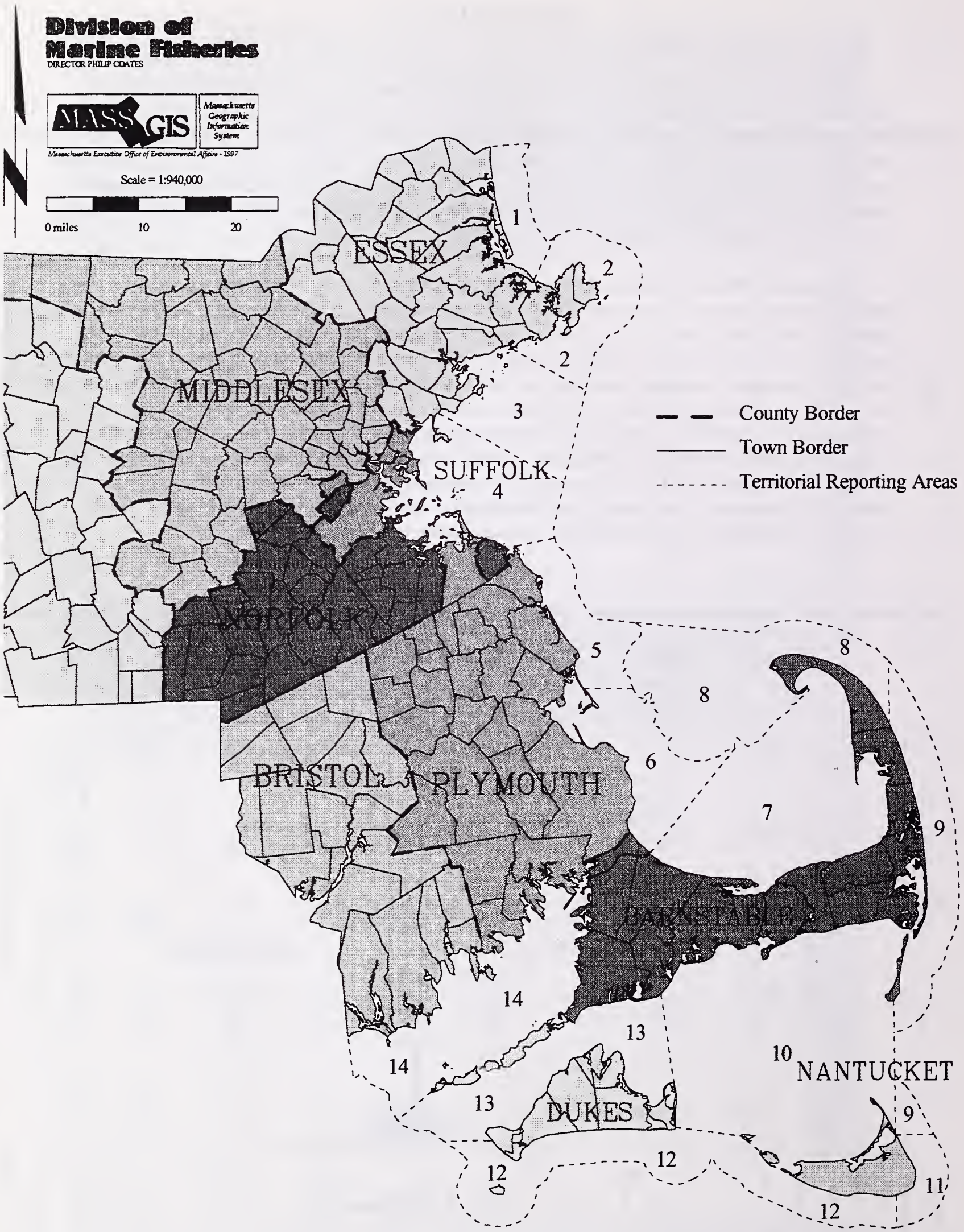
Last year the fishermen selected for audit reported harvesting 1,701,304 pounds of lobster on their 1996 catch reports. The audit of actual records showed total landings of 1,694,600 pounds, a difference of 6,704 pounds or 0.4 percent. Four of the randomly selected fishermen have yet to respond to the audit request. Figure 9 shows the distribution of the percent difference between the selected fishermen's reported catch and their audited records. In general, reported landings are very well documented by dealer receipts and/or personal records, especially by the so-called "high-liners" in the fishery. Most of the lobstermen have had licenses for several years and know what is required in terms of reporting their fishing activities and have been informed of the value of accurate reporting in the development of management plans. They also know that their reported information is kept strictly confidential and published only in aggregate form. These factors all contribute to a conscientious and responsible reporting constituency.

Figure 9. Massachusetts Commercial Lobster Fishery
Frequency Distribution of the Percent Difference Between
Fishermen's Reported Catch and Their Audited Records



Number of Fishermen Audited = 140

Figure 10. Coastal Map of Massachusetts Showing County Boundaries



Division of Marine Fisheries
Annisquam River Marine Fisheries Station
Statistics Project
30 Emerson Avenue
Gloucester, MA 01930

Adams, Leonard
Government Documents Collection
University Library
University of Massachusetts
Amherst MA 01003